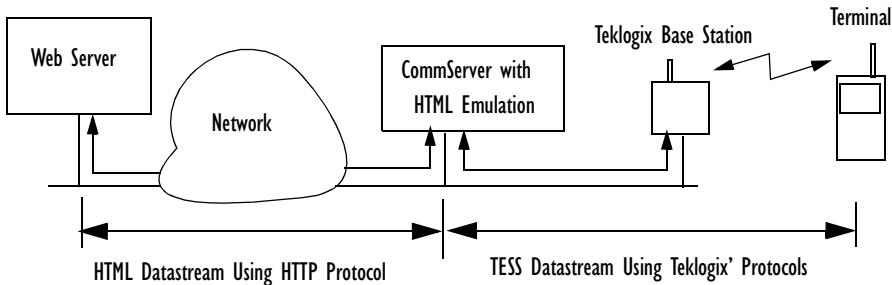
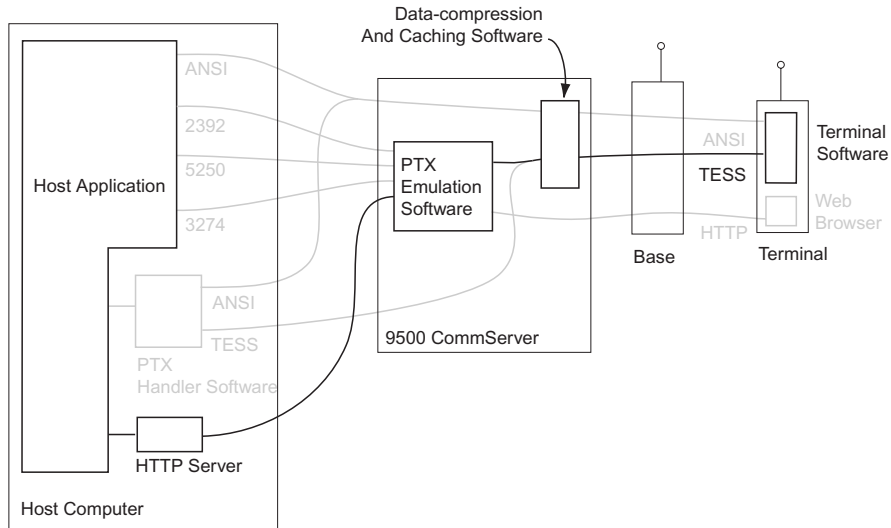


SET-UP FOR HTML EMULATION 10

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10.1 Types Of Connections

The Teklogix TekHTML emulator allows Teklogix terminals running TESS to display HTML pages supplied by an external web server:



The HTML emulation in the CommServer accepts HTML pages via the HTTP protocol from a web server. It then converts them to TESS pages, and sends the TESS pages on to Teklogix terminals via Teklogix' protocols. It also accepts responses from those terminals, translates them from TESS into the appropriate HTTP format, and sends them via HTTP to the web server.

The terminals must be configured for TESS.

10.2 CommServer Configuration: HTML/TESS



Important: *Changes to the CommServer configuration will only take effect after verifying the changes, and then restarting the CommServer's emulation software. See page C-177 in Appendix C, "The 9500 CommServer's Web Interface".*

The following is a sample configuration of a Psion Teklogix 9500 Communications Server connected over an Ethernet line to a web server (an HTTP host).

Only the relevant parameters in each screen are described here. For a complete definition of **all** the elements in each screen, please refer to Appendix C, "The 9500 CommServer's Web Interface".

The configuration process on the CommServer has a number of steps:

- Configuring the network interface.
- Configuring the CommServer's IP settings, including the host and routing tables.
- Configuring the host connection, including emulation options, protocol options, and function keys.

These steps are described in the following sections.

10.2.1 Setting Up The Network Connection

10.2.1.1 Setting Up The Network Adaptor

The CommServer can have up to two Ethernet network connections. Each network connection is set up from Windows network configuration; HTML/TESS over Ethernet requires the configuration of an Ethernet connection.

Adaptor cards for the CommServer, such as the Ethernet card supplied with the CommServer, are normally installed by Teklogix at the factory as part of a customer order. They can also be installed at an authorized service centre.

10.2.1.2 Specifying The Controller's TCP/IP Settings

If you will be using Internet Protocol over a network interface, certain parameters must be set up for the network interface. These are set through the CommServer's Windows networking interface.

To set up the IP parameters of the network interface:

1. Open the CommServer's desktop interface.
2. Select *Start, Settings, Control Panel*. The *Control Panel* appears.
3. Select *Network and Dial-Up Connections*. The *Network and Dial-Up Connections* window appears, with a LAN connection for the new interface.
4. Right-click on the LAN connection. A pop-up menu appears.
5. Select *Status*. A *Status* window appears.
6. Press the *Properties* button. A *Properties* window appears listing the network interface and the protocols it supports; the network interface is named at the top of this window.
7. Select the *TCP/IP* protocol from the list.
8. Press the *Properties* button. The *IP Properties* window appears.
9. Set the parameters as follows:

Use DHCP: Unselect this radiobutton. The other parameters on this tab become available.

IP address: Enter the IP address of the CommServer's network adaptor.

Subnet Mask: Enter a network mask for this interface.

Default gateway: Enter the IP address of the default gateway. Packets not destined for the local subnet will be sent to this address unless there are other options.

DNS: Enable this parameter to use DNS.

10.2.1.3 Setting Up The Controller's Host Table

The host table matches host names to IP addresses. If DNS is not being used, and a static host table is desired for the CommServer, the Windows host table can be modified to include the desired host entries. The host table file is located in the directory:

`C:\WINNT\System32\drivers\etc.`

Its name is simply `hosts` (with no filename extension). Entries in the Windows host table take preference over those provided by software such as DNS.



Note: *The term host in this context refers to any device with an IP address, including parts of the Teklogix system such as the CommServer and its associated base stations.*

This use of host is common in the networking field. It should be distinguished from Teklogix's use of host versus terminal.

To manually add an entry to the CommServer's host table:

10. Open the host table file in a text editor.

Entries in the host table appears as follows:

`127.0.0.1                  localhost`

11. Add another line with the hostname of the host, and its IP address.

10.2.1.4 Setting Up The Controller's Routing Table

The routing table is used when the CommServer and the host are not connected directly on a single physical network segment.

Packets are routed between network segments to the network connections depending on the packets' destination addresses and on the contents of the CommServer's hosts and routing table.

To add an entry to the CommServer's routing table:

1. Select *Start, Settings, Control Panel*. The *Control Panel* opens.

2. Select *Routing and Remote Access*. The *Routing and Remote Access* window opens. This window has a tree at the left-hand side.



Note: *Help for the Routing and Remote Access window is available by selecting Action, Help, or by pressing the Help icon.*

3. Click on *CommServer Name (local)*. The tree expands to show the choices for the CommServer.
4. Click on *IP Routing*. The tree expands to show the choices for the CommServer's IP routing.
5. Click on *Static Routes*. A list appears at right; any hosts already in the routing table will be listed here.
6. Right-click on the list. A pop-up menu appears.
7. Select *New Route...* from the menu. The *New Static Route* dialog box appears.
8. Set these parameters as follows:

Interface:

Select Local Area Connection.

Destination:

Enter the IP address of the host.

If the host is on the same subnet as the CommServer, enter its address here and in the Gateway textbox.

Subnet Mask:

Set this parameter to 255.255.0.0.

Gateway:

Enter the router's IP address in this textbox. This device must be on the same subnet as the CommServer, and must be capable of sending packets to the host. If the host is on the same subnet as the CommServer, enter its address here and in the Destination textbox.



Note: *The IP addresses on this screen must be entered as four decimal numbers (from 000 to 255 inclusive). The dialog box automatically skips past the dots.*

Metric Count:

Leave this parameter at 1.

- 9. Press the *OK* button. The new route appears in the list.
- 10. Close the *Routing and Remote Access* dialog box.

10.2.2 Setting Up The Host Connection

A new host connection needs to be defined on the CommServer for the HTML host.

- 1. Select *Create New* in the *Hosts* listbox n the *Configuration Main Menu*.
- 2. Press the associated *Configure* button:

Controller Configuration:

Hosts:

[1] Fred

Configure

Base Stations:

[#] Create New

Configure

The CommServer displays the *Configure New Host* screen:

PTX Communications Server:
Configure New Host

Psion Teklogix

Name:

Unnamed Host

Enabled:

☒

Emulation and Protocol:

[1] 3274 / Telnet

Terminal Range:

1 ... 32

OK

Cancel

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- 3. Fill in the entries as follows:

Name:

Enter a name for the new host connection. This name is used in the various menus and screens that mention this host.



Warning: *Do not put a period (“.”) in the host name.*

Enabled: Select this checkbox to enable the new host connection.

Emulation and Protocol:

Select *HTML* for the emulation and protocol.

Terminal Range:

Enter the range 1 to 32 for this host. The number in the first box is mapped to the *first host terminal number*. The number in the second box is mapped to the *last host terminal number*.

To modify the numbers, highlight the box and type the number. After you have done so, press <ENTER>.

For example, if you have two hosts defined, and you want Teklogix terminals 1 and 2 to communicate with Host #1 and the rest with Host #2, you need to specify the range “1...2” for Host #1 and the range “3...32” for Host #2.

There can also be an overlap between terminal ranges of two or more hosts. For example, you can specify the range “1...5” for the first host and “3...32” for the second host. Those terminals which are in both ranges – 3, 4, 5 in this case – will be able to select which one of the two hosts they connect to.

4. Press the *OK* button. The CommServer displays the *Configuration Main Menu*.
5. Select the name of the new host connection in the *Hosts* listbox on the *Configuration Main Menu*.
6. Press the associated *Configure* button:

The screenshot shows a 'Controller Configuration' dialog box. It has two main sections: 'Hosts' and 'Base Stations'. The 'Hosts' section contains a listbox with '[1] Fred' and a 'Configure' button. The 'Base Stations' section contains a listbox with '[#] Create New' and a 'Configure' button.

Controller Configuration:	
Hosts:	[1] Fred [Configure]
Base Stations:	[#] Create New [Configure]

The CommServer displays the *Host Menu* for the new host connection:



The *Configure* button associated with *General Options* displays the *General Host Options* screen. Since this screen contains the same information as the *Configure New Host* screen, with the addition of a *Delete* button, there is no need to display it.

7. Press the *Configure* button associated with *Emulation Options* to display the *HTML Emulation Options* screen:

Fill in the entries on this screen as follows:

Screen Size (row x col):

These textboxes specify the height and width (in characters) of the virtual screen used by the emulator when it displays the text of web pages. Leave the textboxes at 24 and 80.

Start page:

Add the URL of the host which will serve the HTML pages to the CommServer. The `http://` part of the URL must be present.

Character Width on the Terminal:

Leave this textbox at its default of 8.

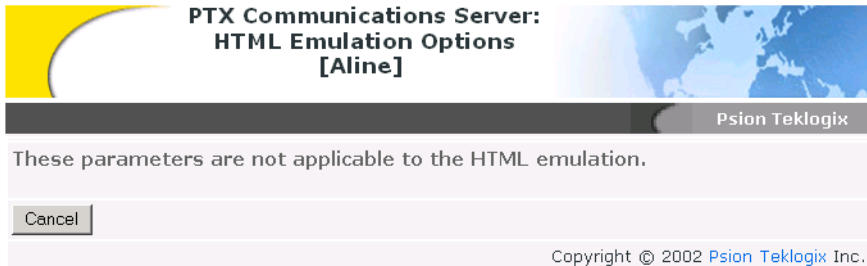
Passthru, TSF/O:

Leave these checkboxes unselected.

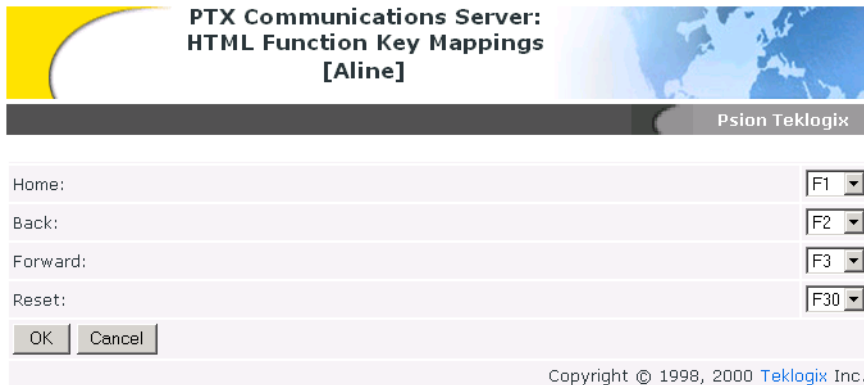
Pages, Transmit Line, Field Overhead:

Leave these textboxes at their defaults of zero.

8. Press the *OK* button. The CommServer displays the *Configuration Main Menu*.
9. Press the *Configure* button associated with *Protocol Options*. The CommServer displays the *HTML/TESS Protocol Options* screen:



10. There are no configurable options in this screen.
11. Press the *OK* button. The CommServer displays the *Configuration Main Menu*.
12. Press the *Configure* button associated with *Function Key Mappings* to display the *HTML/TESS Function Key Mappings* screen:



To change a function key, click on the listbox for that function key and select the new value from the choices.

13. Press the *OK* button. The CommServer displays the *Main Configuration Screen*.

The CommServer is now configured to receive HTTP connections and HTML data from a web server over Ethernet.



Important: *Changes to the CommServer configuration will only take effect after verifying the changes, and then restarting the CommServer's emulation software. See page C-177 in Appendix C, "The 9500 CommServer's Web Interface".*

10.3 Operating A Terminal Using HTML Emulation

Web pages are displayed as TESS pages on the terminal screen, subject to TekHTML's limitations. A user can freely move the cursor between input fields (links and data entry areas). If a page has no links, an artificial link to the current page is inserted to allow keyboard input. All pages should have links; however the function-key equivalents of the browser's back, forward, and home buttons (by default, the <F1>, <F2>, and <F3> keys, respectively) may be used to navigate away from pages.

After users enter data in input fields, they must position the cursor on a button or link field and press <ENTER>. Alternatively, they can press a function key to select one of the links on the page. The terminal sends the data entered and the function/ENTER key pressed back to TekHTML.

- When the user selects a link, the browser requests the linked page. Links may be relative or absolute. They are resolved according to RFC 1808. TekHTML fetches the new page, translates it into TESS, and sends it to the terminal to be displayed.
- When the user selects a button in a form, this form is sent back to the Web server. An ACTION attribute of the <FORM> tag can also be relative or absolute. Both GET and POST methods are supported. TekHTML waits for the HTML response from the server, translates it into TESS, and sends it to the terminal.

- When the user presses the <ENTER> key on an <INPUT> control but not a button, TekHTML prints an error message to the console and the error log, and redisplayes the current page again.

The attribute <FKEYONENTER> can be used to remap the <ENTER> key into a function key; the function key is applied when the user presses the <ENTER> key.

All spaces and other special characters (such as #, &, etc.) are converted into escaped text using the standard application/x-www-form-urlencoded encoding scheme. The only deviation from the standard is for spaces, which are encoded to %20 rather than to +. However, this alternate encoding should be accepted by all web servers.

10.4 How The HTML Emulator Handles Errors

The CommServer's HTML emulator has several mechanisms for handling errors. The following is a list of potential errors and what the emulator will do:

- *connection to the host not established:*
The browser displays the previous screen and unlocks the terminal. The user can submit the request again.
- *connection to the host cut off in mid-connection:*
If no page data was received, the message "No data on page" appears. If a partial page is received, the emulator displays it as best as it can. The user can attempt to reload the page, by pressing the 'Back' button (default F2), then pressing the 'Forward' button (default F3).
- *file not found:*
The server returns a page containing an error message "404: not found". The user can go back to the previous page. This error indicates that the web page specified in the link does not exist, or that an unsupported feature, such as redirection, was used.
- *forbidden access, etc:*
The web server returns a page containing an error message with an error number and error text. The user can go back to the previous page.

Web pages may be displayed differently from what the user expects.

Missing features or text are probably due to unsupported features on the web page, such as frames or style sheets. Strange positioning of text is probably due to complex web pages; nested tables in particular cause text to appear strangely, due to the HTML emulator's limitations involving tables. Failure to transmit data to the web server is probably due to an unsupported web page feature such as a radio button, checkbox, or complex form.

